DEPLOYMENT SIZING GUIDE

Virtualization Manager

Version 8.4

Table of Contents

Introduction to sizing and scaling your Virtualization Manager deployment

By following the instructions in this guide, you can successfully size and scale your VMAN deployment to meet the monitoring and management needs of any size virtual environment. Follow these steps to learn what you'll need to size and, if necessary, scale your VMAN deployment:

1. Use the licensing and deployment size table to give you an idea of your environment's size and what the appropriate license for your deployment is.

2. Read the Basic deployment considerations.

3. If you're ready to scale, or are planning to scale your VMAN deployment, follow the instructions in the section that corresponds to the polling method used in your VMAN environment:

   - If you're using VMAN Orion polling, see Scaling your VMAN Orion deployment.
   - If you're using VMAN appliance polling, see Scaling your VMAN appliance deployment.

ⓘ Not sure which polling method you're using in your VMAN installation? Find out which type of polling your VMAN environment is using and why it matters.

VMAN licensing and deployment size information

Virtualization Manager is licensed according to the number of processor sockets on your physical hardware.

ⓘ Physical hardware refers to ESX hosts for VMware or Windows Servers for Hyper-V.

Use this table to get an idea of your environment's size or to determine which license is appropriate for your deployment.

ENVIRONMENT SIZE	SOLARWINDS VIRTUALIZATION MANAGER LICENSE
Small - up to 3000 virtual machines	VMS8 (up to 8 sockets) VMS16 (up to 16 sockets) VMS32 (up to 32 sockets) VMS64 (up to 64 sockets)
Medium - up to 6000 virtual machines	VMS112 (up to 112 sockets) VMS192 (up to 192 sockets) VMS320 (up to 320 sockets)
Large - up to 10000 virtual machines and beyond	VMS480 (up to 480 sockets) VMS640 (up to 640 sockets) VMS800 (up to 800 sockets) VMS1120 (up to 1120 sockets) VMS1440 (up to 1440 sockets) VMS1680 (up to 1680 sockets) VMS1920 (up to 1920 sockets) VMS2400 (up to 2400 sockets) VMS3040 (up to 3040 sockets) VMS3840 (up to 3840 sockets) VMS4800 (up to 4800 sockets)

Basic deployment considerations

When planning any VMAN deployment, consider the following:

- In medium and large deployments, SolarWinds recommends that you deploy Additional Polling Engines (APE) for Orion Platform installations or federated collectors for VMAN appliance installations for every 3,000 virtual machines. Then, split the collection load in a balanced way so that each server collects a similar amount of data.
- Any number of deployment factors could cause the recommended size to grow from small to medium to large. For example, for VMware virtual machine environments, the number of VMs per vCenter significantly affects the amount of resources you need for the server that's monitoring that vCenter.
- For VMware virtual machines, if you collect data from large vCenters containing more than 4,000-5,000 virtual machines, increase the memory assigned to the server that collects from the vCenter (the main Orion server, the main appliance server, or the Additional Polling Engine or federated collector).
- If you are scaling your environment with Additional Polling Engines or federated collectors, and you're monitoring a vCenter in VMAN, all hosts belonging to that vCenter will be monitored (polled) by the same server.
- If you are scaling your environment with Additional Polling Engines or federated collectors, Hyper-V hosts belonging to the same Hyper-V cluster should always be monitored (polled) by the same server.

Find out which type of polling your VMAN environment is using and why it matters

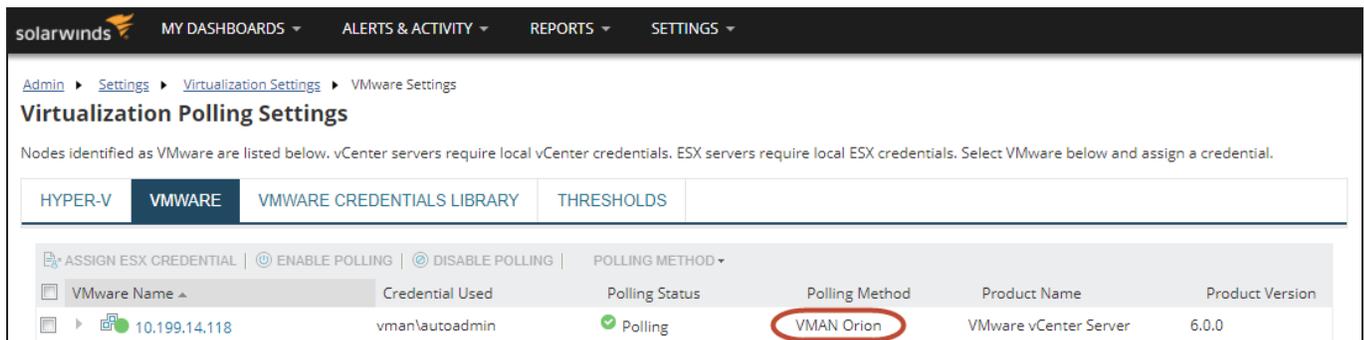There are two types of polling for VMAN: VMAN Orion and VMAN Appliance.

- If you've installed VMAN 8.0 or later in the Orion Platform, you're likely using VMAN Orion polling.
- If you're using the VMAN appliance and have integrated it with the Orion Platform, and **if you haven't yet switched polling over to VMAN Orion**, you're likely using VMAN Appliance polling.

To verify which type of polling your environment is using:

1. Log in to your VMAN Orion server's Orion Web Console.

   > ⓘ If you're using the VMAN appliance and have **not** integrated it with an Orion Platform installation, you'll scale your VMAN appliance environment. See Scaling your VMAN appliance deployment.

2. Navigate to Settings > All Settings > Under Node & Group Management > Manage Virtual Devices.

3. Select the Hyper-V tab if you're monitoring Hyper-V VMs or the VMware tab if you're monitoring VMware VMs.

4. Check the Polling Method column to determine the polling method used to monitor each virtual machine.

Why your polling method matters

Your polling method determines whether to scale your Orion Platform with Additional Polling Engines or to scale your VMAN appliance with federated collectors. You won't need to do both.

- If you're using VMAN Orion polling, scale your VMAN Orion deployment.
- If you're using VMAN appliance polling, scale your VMAN appliance deployment.
- If you're using Basic polling, consider switching to VMAN Orion polling to gain the advanced polling metrics provided by your VMAN license.

Scale your VMAN Orion deployment

If you're using VMAN Orion polling, in order to scale your VMAN deployment, you need to scale your Orion Platform deployment. If you're not sure, find out which type of polling your VMAN environment is using and why it matters.

> ⓘ Scaling your deployment of VMAN in the Orion Platform is different from scaling a VMAN appliance installation, so if you still use the legacy VMAN appliance for polling and haven't switched to VMAN Orion polling, see Scaling your VMAN appliance installation.

When you scale your VMAN Orion Platform deployment, you'll do two things:

- Increase the system specifications of your main VMAN Orion server to match your deployment size
- Set up Additional Polling Engines to help distribute monitoring workload

> 💡 If you have multiple SolarWinds products installed onto your main Orion server, see the Orion Platform multi-module system guidelines for more information about recommended requirements for various deployment sizes.

Increase the system specifications of the main VMAN Orion server

As your VMAN environment grows, the load on your main server increases. Adding Additional Polling Engines to your deployment will help handle the increased monitoring load, but that monitored information still needs to be processed by your main Orion server.

To help your main Orion server keep up with the additional processing load, you should upgrade it as your environment grows. In general, your Orion server should:

- Meet the basic requirements for a VMAN and the Orion Platform installation.
- Increase in memory as the environment grows in size:

Main Orion server required memory based on environment size

ENVIRONMENT SIZE	WITHOUT RECOMMENDATIONS	WITH RECOMMENDATIONS
Small (up to 3000 VMs)	8 GB	16 GB
Medium (up to 6000 VMs)	16 GB	32 GB
Large (10000 VMs or larger)	32 GB	48 GB

Additional Polling Engines (APEs)

Additional Polling Engines are additional Orion servers that you can set up with the specific purpose of helping to distribute and balance the workload of Orion-based operations. For VMAN, this means distributing the monitoring workload for all of your monitored virtual machines.

> 💡 Additional Polling Engines should meet the basic requirements for a VMAN and the Orion Platform installation.

As your environment grows, install Additional Polling Engines to scale your Orion Platform deployment to keep up with your VM load.

> ⚠️ Don't apply the primary or secondary VMAN license to a VMAN-specific Additional Polling Engine. It's not required. See Virtualization Manager primary and secondary licenses for more information on how to use the primary and secondary VMAN licenses.

APEs are free for VMAN

While Additional Polling Engines for most Orion Platform products require an additional license, for VMAN, Additional Polling Engines are available for free.

You can have as many VMAN-specific Additional Polling Engines as you need, and you don't need to purchase any additional licenses. To set up a free Additional Polling Engine (also known as a free poller), you just need to select the option "Additional Polling Engine for Storage Resource Monitor or Virtualization Manager" when you install the APE using the SolarWinds Orion Installer.

> ⚠️ By selecting "Additional Polling Engine for Storage Resource Monitor or Virtualization Manager" during the installation of an APE, that free APE can poll **only** objects that are monitored with VMAN or SRM.

When to add an Additional Polling Engine to your VMAN Orion environment

SolarWinds recommends adding an Additional Polling Engine to your deployment for every 3,000 virtual machines in your environment.

So if you have around 9,000 virtual machines, SolarWinds recommends having at least two Additional Polling Engines (for a total of three servers, including the main Orion server) to balance the polling load.

Additional Polling Engines for VMAN are free, so you can set up as many as you need without the need for additional licenses.

How to install an Additional Polling Engine

Use the Orion Installer. You can use the same installation file that's used to install VMAN.

1. Run the installer on a computer that does not already have an Orion server installed.

2. Select Add a Scalability Engine and click Next.
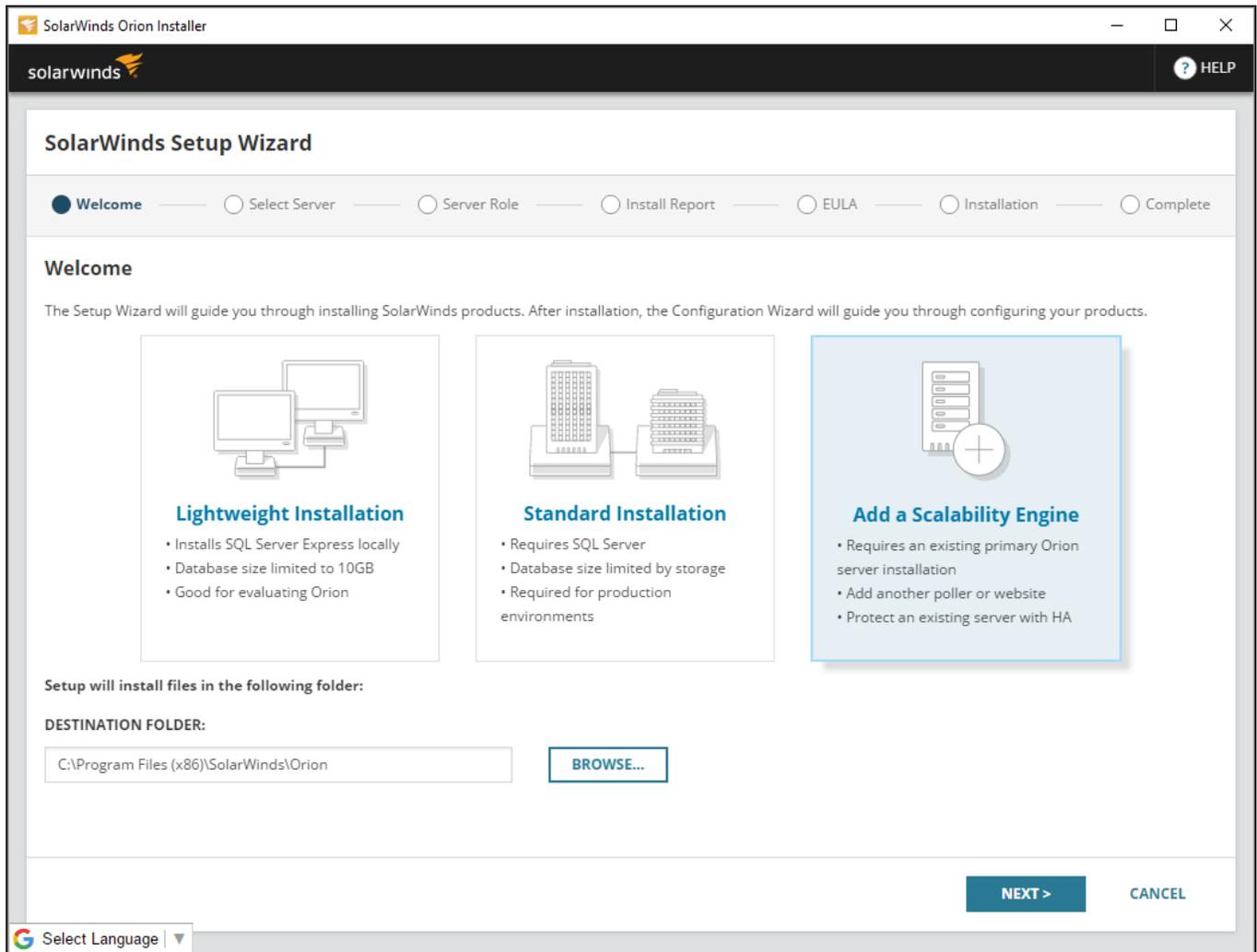
3. Enter your Orion server's IP address or hostname.

4. Select Additional Polling Engine for Storage Resource Monitor or Virtualization Manager and click Next.
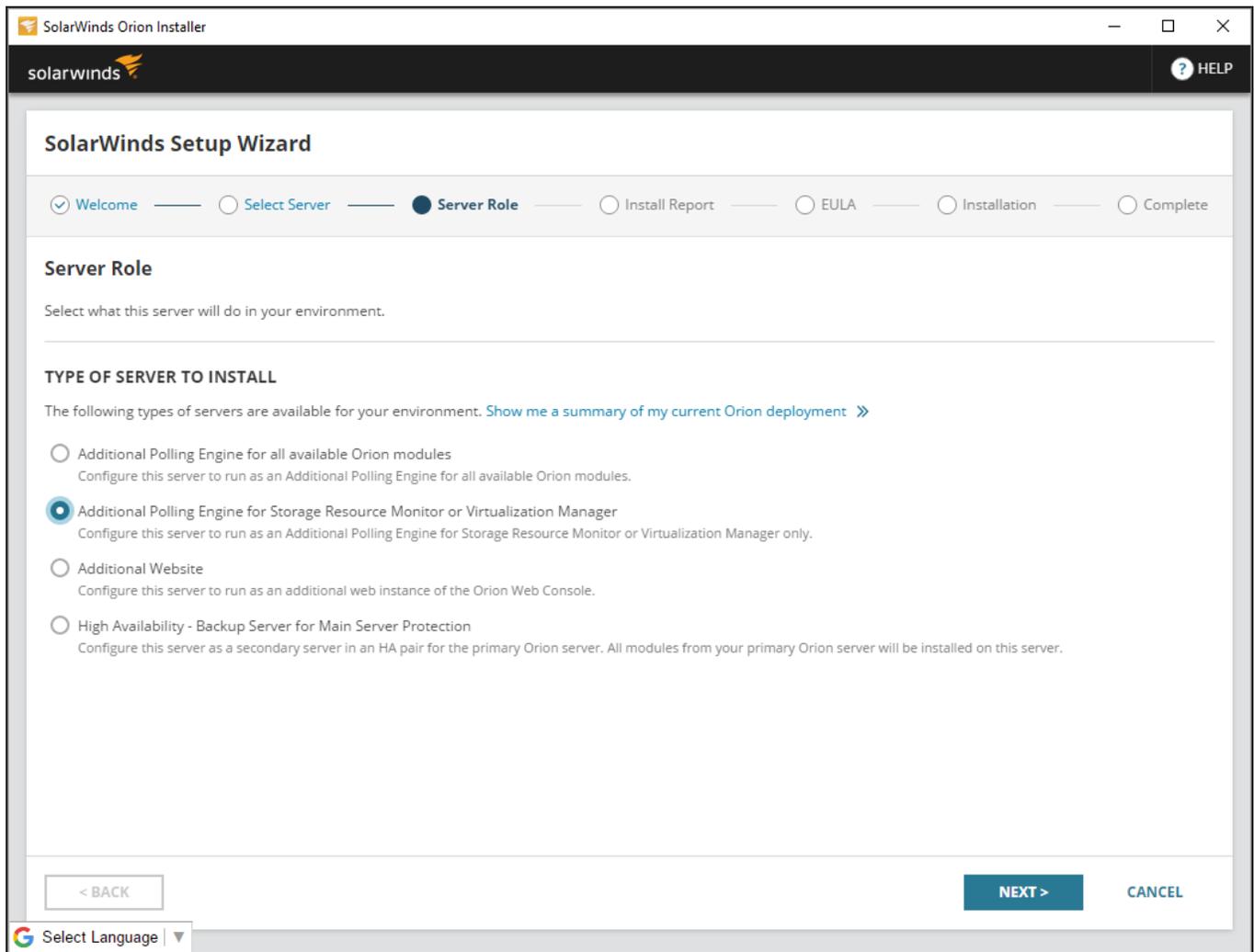
> ⚠ You **must** select Additional Polling Engine for Storage Resource Monitor or Virtualization Manager to set up the Additional Polling Engine free of charge without requiring an additional license.

5. Follow the remaining onscreen instructions to complete the installation.

For more detailed guidance on installing an Additional Polling Engine, see SolarWinds Orion Installer and Scalability Engine Guidelines.

Distribute your VMAN monitoring load to installed Additional Polling Engines

After you've installed an Additional Polling Engine, you can do two things to distribute VMAN's monitoring load to it:

- When adding a new vCenter, Hyper-V host, or standalone ESXi host, select the Additional Polling Engine in the dropdown box under Polling Engine.
- If you want to redistribute your current monitoring load, you can change the polling engine for specific nodes by going to ALL SETTINGS > Manage virtual devices > Change Polling Engine.

> ⓘ All nodes under a single vCenter, or Hyper-V host will always be polled by the same polling engine. Select the top-level vCenter, ESX host, or Hyper-V host to change the polling engine for all associated VMs.

Scale your VMAN appliance deployment

If you've integrated the VMAN appliance with an installation of VMAN in the Orion Platform, you will only need to scale your VMAN appliance if you're still using VMAN Appliance polling for monitoring.

If you're not sure, find out which type of polling your VMAN environment is using and why it matters.

If you're using the VMAN appliance and have **not** integrated it with an installation of VMAN in the Orion Platform, follow the instructions in this section.

> ⓘ Scaling your deployment of the VMAN appliance is different from scaling an installation of VMAN in the Orion Platform. If you don't use VMAN appliance polling, see Scaling your VMAN Orion installation.

Before scaling, consider retiring the VMAN appliance and switching to VMAN Orion polling

As of VMAN 8.0, the appliance is no longer required, so if you're still using the VMAN appliance and running VMAN 8.0 or greater, the first thing to do is to consider retiring the appliance by switching to VMAN Orion polling.

By retiring the appliance, you'll no longer need to maintain separate appliance and Orion servers in order to use all of the latest VMAN features like Recommendations. If you do retire the appliance and switch to VMAN Orion polling, you'll scale VMAN in the Orion platform.

However, if you're not ready to retire the appliance, you can still scale your appliance environment.

> 💡 Not sure if you're ready to retire the appliance and move fully over to the Orion Platform? See this post on THWACK to see a breakdown of features available in VMAN as part of the Orion Platform.

When you scale your VMAN appliance deployment, you'll do two things:

- Increase the system specifications of your main VMAN appliance server to match your deployment size
- Set up federated collectors to help distribute monitoring workload

Increase the system specifications of the main VMAN appliance server

As your VMAN environment grows, the load on your main server increases. Adding federated collectors to your deployment will help handle the increased monitoring load, but that monitored information still needs to be processed by your main VMAN appliance server.

To help your VMAN appliance server keep up with the additional processing load, you should upgrade it as your environment grows. In general, your main VMAN appliance should:

- Meet the basic VMAN appliance requirements.
- Increase in memory by 8 GB for every 1,000 virtual machines.

Federated collectors

Federated collectors are additional servers that you can set up with the specific purpose of helping to distribute and balance the workload of VMAN appliance-based data collection used for VM monitoring.

As your environment grows, install federated collectors to scale your VMAN appliance-based deployment to keep up with your VM load.

When to add a federated collector to your VMAN appliance environment

SolarWinds recommends adding a federated collector to your deployment for every 3,000 virtual machines in your environment.

So if you have around 9,000 virtual machines, SolarWinds recommends having at least two federated collectors (for a total of three servers, including the main VMAN appliance - or a total of four servers, if you have also integrated the VMAN appliance with an Orion server) to balance the polling load.

Federated collectors are free, so you can set up as many as you need without the need for additional licenses.

How to install a federated collector

Installing a federated collector is similar to installing the main VMAN appliance, but instead of the main VMAN appliance installer package, you'll use a federated collector package included in the Customer Portal downloads section. Federated collectors are also installed as virtual appliances.

> 💡 Federated collectors should meet the basic requirements for the VMAN appliance.

There are two federated collector packages available for download after you've logged into the Customer Portal:

- Federated Data Collector Virtual Appliance for Hyper-V
- Federated Data Collector Virtual Appliance for vSphere 5 and higher

You can find detailed instructions for installing a federated collector in the 7.1 VMAN Administrator Guide. See the section "Use federated collectors in Virtualization Manager".